

sending an uplink state flag indicating channel availability in a first one of the plurality of downlink radio link control data blocks; and

a GPRS/EDGE subsystem within the mobile station, having a mobile station medium access control layer receiving the identifier and the uplink state flag, and sending uplink data in a first one of the plurality of uplink radio link control data blocks to the base station in response to the uplink state flag indicating channel availability, wherein the base station medium access control layer sends a directed acknowledgement in a subsequent one of the plurality of downlink radio link control data blocks in response to receipt of the uplink data from the mobile station, and the mobile station sends uplink data in a second one of the plurality of uplink radio link control data blocks in response to the directed acknowledgement.

2. (New) A communication system including a first station sending a plurality of uplink data blocks to a second station in an uplink temporary block flow, and receiving a plurality of downlink data blocks from the second station in a downlink temporary block flow, comprising:

a1 a protocol control unit within the second station, having a medium access control layer, which sends an identifier during setup of the downlink temporary block flow, and sends an uplink state flag indicating channel availability in a first one of the plurality of downlink data blocks; and

a packet data subsystem within the first station, having a medium access control layer, which receives the identifier and the uplink state flag, and sends uplink data in a first one of the plurality of uplink data blocks to the second station in response to the uplink state flag indicating channel availability, wherein the medium access control layer of the second station sends a directed acknowledgement in a subsequent one of the plurality of downlink data blocks in response to receipt of the uplink data from the first station, and the first station sends uplink data in a second one of the plurality of uplink data blocks in response to the directed acknowledgement.

3. (New) A communication system in accordance with claim 2 wherein the first station is a

U.S. Application Serial No. 09/599,355

mobile station and the second station is a base station in a radio communication system.

4. (New) A communication system in accordance with claim 3 wherein the radio communication system includes a Global System for Mobile (GSM) communication system with General Packet Radio Service (GPRS) and Enhanced Data for Global Evolution (EDGE).

5. (New) A communication system in accordance with claim 2 wherein the downlink data blocks include downlink radio link control data blocks, and the uplink data blocks include uplink radio link control data blocks.

6. (New) A communication system in accordance with claim 2 wherein at least some of the downlink data blocks and the uplink data blocks include packetized voice data.

7. (New) A method for rapid uplink access of a communication system including a first station and a second station, the method in a first station comprising:

determining if the first station has uplink data to send;

if the first station has uplink data to send, then determining if an uplink temporary block flow setup has been established;

if an uplink temporary block flow has not been established, then establishing a temporary block flow setup;

receiving a downlink data block including an uplink state flag;

comparing the value of the uplink state flag to a value indicative that the uplink channel is available, and to a value corresponding to an address assigned to the first station; and

if the value of the uplink flag corresponds to the address assigned to the first station or the value of the uplink state flag is a value indicative that the uplink channel is available, then sending an uplink data block from the first station to the second station.

8. (New) A method in accordance with claim 7 wherein if the value of the uplink state flag corresponds to the address assigned to the first station, when comparing the value of the uplink state flag, then incrementing to the next uplink data block to be transmitted in the first station

U.S. Application Serial No. 09/599,355

after sending an uplink data block.

9. (New) A method in accordance with claim 7 wherein the uplink data blocks and the downlink data blocks are received via a radio link.

a1
10. (New) A method in accordance with claim 7 wherein the uplink data blocks include uplink radio link control data blocks and the downlink data blocks include downlink radio link control data blocks.

not'd
11. (New) A method in accordance with claim 7 wherein a value of zero for the uplink state flag is indicative that the uplink channel is available.

12. (New) A method in accordance with claim 7 wherein the first station is a mobile station and the second station is a base station in a radio communication system.

13. (New) A method in accordance with claim 12 wherein the radio communication system includes a Global System for Mobile (GSM) communication system with General Packet Radio Service (GPRS) and Enhanced Data for Global Evolution (EDGE).

14. (New) A communication system in accordance with claim 7 wherein at least some of the downlink data blocks and the uplink data blocks include packetized voice data.

15. (New) A method for rapid uplink access of a communication system including a first station and a second station, the method in a second station comprising:

determining if a channel has already been allocated to communication station in an uplink temporary block flow;

if the channel has not already been allocated, then determining if an uplink data block has been received;

if an uplink data block has been received, then determining if the uplink state flag of the uplink data block has a value corresponding to a valid downlink temporary block flow;

U.S. Application Serial No. 09/599,355

if an uplink data block has not been received or if the uplink state flag of the received uplink data block does not have a value corresponding to a valid downlink temporary block flow, then setting the uplink state flag in the downlink data block to a value indicative that the uplink channel is available, otherwise the uplink state flag in the downlink block is set to the value of the uplink state flag of the received uplink data block; and
sending a downlink data block.

16. (New) A method in accordance with claim 15 wherein the uplink data blocks and the downlink data blocks are received via a radio link.

17. (New) A method in accordance with claim 15 wherein the uplink data blocks include uplink radio link control data blocks and the downlink data blocks include downlink radio link control data blocks.

18. (New) A method in accordance with claim 15 wherein the value of the uplink state flag is set to a value of zero, to indicate that the uplink channel is available.

19. (New) A method in accordance with claim 15 wherein the first station is a mobile station and the second station is a base station in a radio communication system.

20. (New) A method in accordance with claim 19 wherein the radio communication system includes a Global System for Mobile (GSM) communication system with General Packet Radio Service (GPRS) and Enhanced Data for Global Evolution (EDGE).